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# Soviet SALT Violations Feared

USSR engaged in strategic nuclear weapons activities  
that are causing concern to some intelligence officials

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Washington—U.S. intelligence officials are expressing deep concern over Soviet strategic nuclear weapons activities they believe overtly violate the Strategic Arms Limitation Treaty (SALT). Even beyond what appear to be clear-cut violations are other Russian activities that border on treaty violations, or take advantage of loopholes in the agreement.

The recent Soviet strategic nuclear weapons activities include:

- Testing in the past few weeks of the SA-10 surface-to-air missile acquisition and tracking radars against Russian reentry vehicles in an antiballistic missile mode. The phased-array radar was used as a battle management system for low-altitude defense of ICBM silos. The Soviets have developed and tested a hypersonic interceptor missile known as the SH-8 to destroy U.S. reentry vehicles within the atmosphere. Testing of an air defense system in an antiballistic missile mode is a clear violation of the ABM treaty, according to U.S. officials.

- Testing in a ballistic missile defense scenario against reentry vehicles of the SA-5 Gammon air defense radars on at least one occasion. SA-5s are operated from fixed, hardened sites in the USSR and use a target tracking radar known as the Square Pair, and the Back Net acquisition radar along with the Side Net height-finding radar. The SA-5 has a range of 100 naut. mi. and a maximum altitude of about 100,000 ft. The Soviets conducted earlier tests with the SA-5 in the ABM mode (AW&ST Oct. 21, 1974, p. 14), and the U.S. brought up the tests to the Standing Consultative Commission as a possible violation. Those tests were halted then and only recently resumed.

- Tests during recent Soviet and Warsaw Pact war games of a reload capability for the SS-18 ICBM. During the tests in early September, the Soviets simulated firing SS-18s from their silos (launchers), removed the missiles and replaced them with other SS-18s, demonstrating a reload capability. It took the Russians 2-5 days to accomplish the reload procedure.

- Tests of the new submarine-launched ballistic missile from Nenoksa on the White Sea with encrypted telemetry, preventing U.S. verification of missile performance. The new missile is designed for use with the Typhoon-class submarine. At least 80% of the telemetry data was encrypted due

- Tests of a new Soviet air-launched cruise missile from the Tupolev Tu-26 Backfire bomber with a missile range greater than 600 km. (372 mi.). The successful testing of the Soviet version of the USAF/Boeing ALCM should require that the Backfire be counted under the heavy bomber category in the unratified SALT 2 agreement, according to U.S. arms control officials.

The demonstrated reload capability with the SS-18 is causing more concern among U.S. intelligence and arms control communities than any of the other Soviet strategic weapons activities, according to Carter Administration officials, "because it goes to the very heart of SALT; that launchers are counted and not missiles."

Information on Soviet nuclear weapons activities taking advantage of the U.S. in using the SALT agreement to screen testing, or of violations, is emerging just as the U.S. is preparing for meetings in early October by Secretary of State Edmund Muskie with Soviet Foreign Minister Andrey A. Gromyko on arms control agreements for theater nuclear forces in Europe.

The U.S. also is moving toward comprehensive nuclear test ban negotiations in Geneva in October despite what U.S. officials call the most flagrant Soviet violation of the existing threshold test ban treaty that limits both sides to underground nuclear testing at the 150-kiloton level.

The test being described by the arms control community as the "hardest violation yet of the threshold test ban" took place in recent weeks at Semipalatinsk. The U.S. received seismic data from 17 locations providing information that the yield of the nuclear device tested was as high as 640 kilotons, with the lowest possible yield 150 kilotons. U.S. officials said they are 95% certain that the yield of the device was between 300 and 400 kilotons, making it a clear violation of the existing test ban treaty.

"We've never had better data than this," one arms control expert said, "and there is no doubt the Russians have violated the treaty. They've gone over the 150-kiloton limit before but not like this with the evidence so clear. At the same time, the U.S. nuclear weapons laboratories are being hamstrung by having to test below a yield of 90 kilotons to make sure we honor the agreement."

Not only are violations alarming the U.S., one Administration official said, "but there is activity which falls outside the SALT agreement, and there appears no way to negotiate an agreement with the Soviet Union which can cover all eventualities. It all boils down to the fact that we got no limit of the Soviets from SALT, especially with this demonstrated SS-18 reload capability. Either this is a vindication of SALT critics or a violation of the agreement."

The Soviet Union, some U.S. intelligence officials believe, has been using spacecraft to survey U.S. ICBM silo locations. One official said there is evidence the USSR has used a beam splitter mirror on its spacecraft to photograph U.S. missile fields in laser light while it simultaneously photographs the satellite against the star background to pinpoint the location of the spacecraft in relation to each U.S. silo.

As the Soviet spacecraft passes over the USSR, it also photographs Soviet missile silos with the star background. This enables Soviet rocket force officers to "hook the arcs together for precision that could enable CEPs [circular error probable] of 50 to 100 ft."

The USSR already has deployed 248 SS-18s in four models. The ICBM has a hard target capability against Minuteman silos. One version has a yield of 24 megatons and a CEP of 0.23 naut. mi. Another version carries 8-10 reentry vehicles, each with a 0.55-megaton yield with the same CEP.

A third version has a CEP of 0.19 naut. mi. and carries a single 20-megaton warhead. The fourth version has 10 MIRVs, each with a 0.50-megaton yield and CEP of 0.14 naut. mi.

Recent U.S. intelligence analysis has determined that the SS-18 is clearly designed to carry 12-14 reentry vehicles in the post boost vehicle, not the 10 limited by SALT 2.